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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,044	09/24/2003	Mark Charles Dietrich	03W037	5027

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EXAMINER

BERGIN, JAMES S

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/670,044

Applicant(s)

DIETRICH ET AL.

Examiner

James S. Bergin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/27/04; 10/11/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species 3 (embodiment transferring both data and power); sub-species A (the embodiment of the projectile having a target system interface comprising a single coil that transfers both power and data); and sub-species α (the embodiment wherein the plastic material is impregnated with manganese-zinc ferrite) in the reply filed on 7/29/2005 is acknowledged. The traversal is on the ground(s) that in the opinion of the applicants' representative, it would not place an undue burden on the examiner to search and examine all the species in the application. This is not found persuasive because it is only the examiner that can fully appreciate the burden of properly searching and examining all the patentably distinct species in this application. The independent claims as filed are very broad in their scope and are in no way allowable over the known prior art. The patentably distinct species depending from these broad independent claims require separate search strategies and consideration within class 102 (Ammunition and Explosives), class 89 (Ordnance), and class 336 (Inductor Devices) in addition to a foreign patent search, and non-patent literature search. As such the burden on the examiner is excessive and as such, the requirement is still deemed proper and is therefore made FINAL.
2. In response to the applicants' election, claim 6, drawn exclusively to the embodiment wherein the plastic material is impregnated with nickel-zinc ferrite, is withdrawn from examination by the examiner as being drawn to a non-elected sub-species of the invention.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 12-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12, line 7, the limitation, "same coil" is not understood. Does "same coil" mean one coil or a single coil or does "same coil" describe some technical term known in the art?

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kollman et al., hereinafter "Kollman" (US 6,268,785 B1).

Claim 12 is rejected in as much as this claim can be understood in view of its indefiniteness as discussed above.

Regarding claim 12, Kollman discloses a projectile substantially as claimed by the applicants' including a projectile inductive transfer device that permits transfer of power and data between the projectile electronics and an external setter system 150,

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magnetic cores 104 and 114, power coil/ winding 106, data coil/ winding 112 wound about the magnetic core (col. 1, line 12- col. 2, line 45; col. 3, line 6 – col. 6, line 26; figures 1-6). Kollman does not specifically disclose that the power coil/ winding 106, data coil/ winding 112 can in the alternative be made from a single coil/ winding, the single coil/ winding performing the dual roles of data and power transfer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to integrate Kollmans's power coil/ winding 106, data coil/ winding 112 such that they comprised a single coil performing the dual roles of data and power transfer, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184.

Regarding claims 13-17, Kollman either explicitly discloses the voltage waveform types as claimed in claims 13-17 or in the alternative, the examiner takes official notice that it was well known in the art at the time that the invention was made to select voltage waveforms for a particular inductive coil application such that the voltage waveform selected was an appropriate match for the application, thereby ensuring that the coil performed in the intended manner. In view of this official notice, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to select appropriate voltage waveforms for use with Kollman's induction coil, thereby ensuring that the coil performed in the intended manner. Such a selection of appropriate voltage waveforms would include the claimed voltage waveforms of the applicants' claims 13-17.

7. Claims 1, 2, 3, 8-11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kollman et al., hereinafter "Kollman" (US 6,268,785 B1) in view of Stratton (US 4,273,051 A).

Regarding claim 1, Kollman discloses a projectile substantially as claimed by the applicants' including a projectile inductive transfer device that permits transfer of power and data between the projectile electronics and an external setter system 150, magnetic cores 104 and 114, power coil/ winding 106, data coil/ winding 112 wound about the magnetic core (col. 1, line 12- col. 2, line 45; col. 3, line 6 – col. 6, line 26; figures 1-6). Kollman discloses that the magnetic core are comprised of powdered iron or steel but that they can also be made from "any material used in transformers" (col. 3, lines 30-34).

Stratton discloses in column 7, lines 1-5, a magnetic core of inductors 100, 102 may comprise manganese-zinc ferrite, such a core composition having a loss component of magnetic permeability at frequencies above the designed operating frequency.

In view of Stratton, it would have been obvious to one of ordinary skill in the art at the time that the invention was made, to use a core comprising a ferrite compound, such as manganese-zinc ferrite, thus providing the core with a loss component of magnetic permeability at frequencies above the designed operating frequency. Regarding claims 2 and 3, the above combination of Kollman in view of Stratton does not specifically teach that Kollman's magnetic core has a ferrite material content in the range of about 50% to about 90% or in the range of about 70% to about 80%.

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However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include ferrite material in the range of about 50% to about 90% or in the range of about 70% to about 80% in Kollman's magnetic core, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 8, as previously mentioned, Kollman discloses that the magnetic cores are comprised of powdered iron or steel but that they can also be made from "any material used in transformers" (col. 3, lines 30-34). However, Kollman does not specifically disclose that the magnetic core is formed with an extruded material.

The examiner takes official notice that magnetic cores formed from extruded materials such as plastics, were well known in the art at the time that the invention was made, such an extruded material allowing the material to be easily molded into the desired shape of the core. In view of this official notice, it would have been obvious to one of ordinary skill in the art at the time that then invention was made, to form Kollman's magnetic core of an extruded material, such an extruded material allowing the material to be easily molded into the desired shape of the core.

Regarding claims 9 and 10 ,see Kollman's fig. 6.

Regarding claim 11, see Kollman's figures 5 and 6, the nose portion 502 appears to be connected to the body 510 by a snap fit connection. It for some reason the applicant believes that a snap fit connection between a nose cone and a projectile body defines patentable subject matter, then the examiner take official notice that snap fit

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connectors were well known in the art at the time that the invention was made, such a connection providing connection means that is easy to perform. It would have been obvious to one of ordinary skill in the art at the time that the invention was made to use select a snap-fit connector means between Kollman's nose 502 and body 510, so as to avail of a connection means that is easy to perform.

Regarding claim 18, the arguments as applied in the rejection of claim 12 in above previous section and the rejection of claim 1 in this section are further applied.

8. Claims 4, 5, 7, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kollman et al., hereinafter "Kollman" (US 6,268,785 B1) in view of Stratton (US 4,273,051 A) as applied to claims 1 and 18 above, and further in view of DE 197 56 357 A1 (Friedrich et al., hereinafter "Friedrich").

The combination of Kollman in view of Stratton does not specifically teach that the magnetic core comprises a plastic material impregnated with the ferrite material.

Stratton discloses in column 7, lines 1-5, a magnetic core of inductors 100, 102 may comprise manganese-zinc ferrite, such a core composition having a loss component of magnetic permeability at frequencies above the designed operating frequency.

Friedrich discloses that it is well known in the art to embed the constituent materials of the magnetic core of an inductive interface in a plastics material (column 2, lines 15-24).

Regarding claims 4 and 5, in view of the Friedrich, it would have been obvious to one of ordinary skill in the art at the time that the invention was made, to embed the

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manganese-zinc ferrite material of Kollman's magnetic core, as modified by Stratton above, in a plastic material, because to do so would only repeat that which was well known in the art at the time that the invention was made.

Regarding claim 7, Friedrich does not disclose that the plastic material comprises nylon. Examiner takes official notice that nylon is a plastic material that is well known in the prior art to be a suitable constituent in the magnetic cores of transformers and/ or projectile cores, the nylon material being selected because it is at least easily worked by an extrusion process. In view of this official notice, it would have been obvious to one of ordinary skill in the art at the time that then invention was made to select nylon as plastic in Kollman's magnetic core as modified by Stratton and Friedrich, nylon being material that is well known to be at least easily worked by an extrusion process.

Regarding claims 19 and 20, the arguments presented with regard to claims 4 and 5 are further applied.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kurschner et al. (US 5,497,704); Kolbli (US 6,675,715 B1) and Cox et al. (US 6,557,450 B1).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Bergin whose telephone number is 571-272-6872. The examiner can normally be reached on Monday - Wednesday and Friday, 8.30 - 5.30.

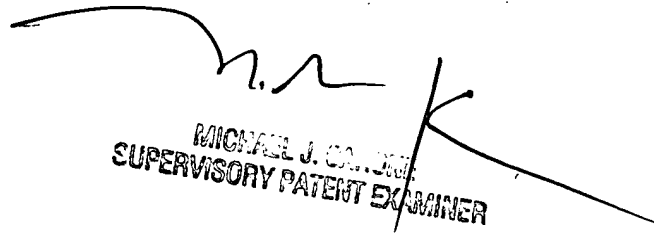
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James S. Bergin



MICHAEL J. CARONE
SUPERVISORY PATENT EXAMINER